takes to the pitiless sunlight of candid confession. The writer vicariously follows this vogue by withdrawing the curtain from the following four cases.

REPORT OF CASES

CASE 1.—D. S., age 52. Railroad division superintendent. Previous history of ordinary health up to two or three years prior to the events here recited. He developed, successively: cough, nervousness, loss of appetite, loss of weight, indigestion, insomnia. Through the railroad medical department a diagnosis of incipient tuberculosis was made. He gave up his position, sold his home, and completed arrangements to remove his family to a tuberculosis community in Arizona. The symptoms of gradually increasing hardness of hearing and tinnitus for two years brought him under the observation of the writer. Impacted cerumen was discovered and removed, whereupon his cough, nervousness, insomnia, and indigestion disappeared; he regained his lost weight and strength and became as well and strong as ever. If tubercle bacilli had been found in the sputum during his low period of general physical condition, they disappeared with his improvement. The railroad ultimately installed him in another town as division superintendent, and his health has remained excellent for ten years after this recovery.

CASE 2.—J. V. R., age 91. Five years previous he had sustained a head injury in an automobile collision. Owing to his advanced age, what would not have proved a serious physical damage to a younger person apparently had effected considerable degree of concussion. He had continuous tinnitus and vague sense of vertigo, preventing his customary automobile riding and restricting his social intercourse very seriously. Five years after the onset of these so-called concussion symptoms, the writer discovered impacted cerumen in his right ear which had been deaf since early childhood. Removal of this cerumen was followed by immediate cessation of the symptoms which had been attributed to concussion. He has recently passed his ninety-third birthday without return of his symptoms. The cerumen had undoubtedly been jarred against the membrana tympani by the accident, contributing to the general results of his injury the pressure symptoms which set up the tinnitus lasting for five years.

CASE 3.—Mrs. E. A. S., age 64. General health good. For eight years her hearing had been growing steadily worse, until she had been compelled to give up church, theaters, lectures, and, during the last year, teas, bridge parties, and other social gatherings. She had consulted otologists in New York, in the Middle West, in the Northwest, and in California; she had undergone courses of vibrations, inflations, and other treatment, and had used an otomassage machine at home. Weber not lateralized, bone conduction longer than the writer's, tragus test indicated nonfixation, high tones 2.5/.9 on the right, 2.7/.9 on the left, tubal catheterization showed very high degree of obstruction, air conduction time 2/30 right, 2/30 left. Moderate nonobstructive septal irregularity, completely buried tonsils (she had been told she had no tonsils), and two molars showed advanced apical infection. She was advised to have the affected teeth and her tonsils removed, and then to undergo three to six months of general systemic fluid alkalization and iodization. Following the removal of her teeth and tonsils she returned to her home in the Northwest. Seven weeks later, after following the outlined treatment rigidly, she reported as follows: "I have had my hearing so long now, I almost forget those sad days when I could not hear. When I first returned home I had to open the door of the grandfather clock and listen closely. Now I can hear it chime and strike the hour even when I am upstairs with my bedroom door closed. About the second week in May I had a very severe headache, lasting over two days. During that time I suffered with nausea, and in the midst of the upheaval my hearing came back suddenly and completely. I was actually too weak to talk about it, but I was very happy and very thankful that first morning when I could hear the birds sing again, and all the other noises of the street came to me so distinctly. There has been no recurrence of the deafness, and there is no roaring in my head though my blood pressure is still too high." This improvement occurred five years ago, since which time she has reported every year, only to confirm the permanence of the result. (Since writing this the patient has been seen twice, each time confirming the former findings of good hearing.)

CASE 4.—E. R., age 27. Following influenza in October, patient had double otitis media; free myringotomy and copious pus discharge from both ears. Discharge and profound hearing impairment continued despite consecutive treatment for four months, during which repeated enlargements of tympanic membrane incisions were made. Simple mastoid operation was recommended, but refused. In February both mastoids were x-rayed, showing generally dark, no distinct destruction of intercellular lamellae. In March patient came under my care, was put on alternating weeks of alkalization and dilute hydrochloric acid, with daily fluid intake of one glass of fluid per hour while awake. Hot fomentations twenty minutes three times daily, and one-half per cent silver nitrate per catheter into the tympanum. In ten days the right ear had ceased discharging and the perforation closed; in fifteen days the left ear ceased discharging and perforation closed. Restoration of hearing succeeded upon the closure of the perforations after a few inflations.

The above cases point out some major effects from relatively minor causes, and indicate the importance of bearing in mind the possibility of an unexpectedly easy solution of some apparently very difficult problems.

1154 Roosevelt Building.

ADRENALIN AS A CLINICAL TEST OF INFECTION AND GANGRENE OF THE SCALP

REPORT OF CASE

By MONTROSE T. BURROWS, M. D.
Pasadena

THE following case history is submitted.

History.—Patient, a man, age seventy-seven, well nourished, moderately vigorous, became bald over the whole of the top of his head forty years ago. He has a fairly good fringe of hair over the back and the sides of his head. His heart loses one beat out of every ten or twelve, otherwise it is regular. There are no murmurs, and the heart dullness does not extend beyond the nipple line nor is the heart demonstrably enlarged to the right. The chest is barrel-shaped. Lungs are clear except for slight emphysema. Abdomen is symmetrical. Spleen is not felt. The liver dullness is one and one-half fingers breadth below the costal margin. The abdominal wall contains considerable fat but there are no scars. Eyes react to light and accommodation: K K normal. There is a moderate amount of pyorrhea and a few defects in the teeth. X-rays show no dead teeth nor abscesses. Aside from his present complaint he has no serious troubles excepting slight constipation off and on, and a slight pain at times in his left leg. Only in recent years has he had to get up at nights to urinate. The prostate is slightly enlarged and nodular. His blood pressure is 127/80.

Laboratory Examinations.—Urine shows a trace of indican and a few mucous shreds. Its specific gravity

is 1027 and it is acid in reaction. There is no albumin, sugar nor acetone. The red blood count is 5,360,000; white blood count, 9600; and hemoglobin is 85.8 per cent by the Newcomer method. The differential blood count shows polymorphonuclear neutrophils, 55 per cent; eosinophils, 4 per cent; basophils, 1 per cent; lymphocytes, 36 per cent; large mononuclears, 3 per cent; and transitionals, 1 per cent. Wassermann and Kahn tests were negative.

Complaint.—Several years ago he fell on the ice, bruising the top of his head severely. He has also suffered with dandruff, itching, and pimples on his head for many years. During the early part of September of last year he noticed a rather large red pimple on the posterior part of the top of his head, just to the right of the middle line. This grew slowly larger and a scab formed. Three other red raised areas appeared and persisted. One was on the back of his head, one on the front and left side and one on the right side near the middle. These latter three have never ulcerated.

When the one with a scab failed to heal he went to a physician in Paris who treated it with silver nitrate and called it a "corn." Later in the same month he was treated by a physician in Switzerland. This physician also used a liquid medicine and told him the lesion was not a serious one. In spite of this treatment the lesion grew larger and in New York on November 15, 1928, it was treated with radium needles for forty-five minutes.

When he was seen by the writer on February 25, 1929, he was suffering from a lesion the size of a quarter of a dollar on the posterior part of the top of his head. This lesion was slightly raised and covered with a scab which was perforated at several points. Pus oozed through these perforations. The lesion was limited to the soft tissues. The scalp moved freely over the skull. While the lesion had the appearance of an infection it was not possible to rule out a diagnosis of epithelioma.

The whole of the bald parts of his head was covered with thin, small yellowish scales. There were also the three slightly raised red areas described above and the skin was thin, atrophic and peeling over both temples. In the hair behind and above the right ear was a small raised keratosis. His hair was gray but the scalp in the area covered by hair was clean.

Treatment.—The larger ulcerative lesion was excised on March 2, 1929, after a preliminary biopsy which showed us to be dealing with a chronic inflammatory lesion in which there was beginning gangrene. Novocain one-half per cent with a trace of adrenalin was used for anesthetic.

The skin incision was made one centimeter beyond the margins of the ulcer and was carried just to the galea aponeurosis. The loosened flap was peeled clean of this aponeurosis and it carried the entire lesion with it. Three actively bleeding points were encountered at points A_1, and A_2, and A_3, respectively, in Fig. 1. Pressure clamping and an adrenalin pledget failed to stop the hemorrhage and it was necessary to ligate these three points.

Clean granulations quickly filled the whole of the area except at the points of the ligatures A_2 and A_3. A small amount of pus was noted at A_1, but this apparently disappeared after a few days. A dirty necrotic slough with pus developed about A_2 and A_3. This slough spread rapidly and refused to respond to any medical treatment. It was removed, therefore, with a piece of the neighboring skin and superficial fascia and again it was found necessary to ligate the vessels B_1 and B_2 (Fig. 1) in order to stop the hemorrhage.

Again, as before, clean granulation filled the central area while rapidly spreading infection with necrosis appeared about the points of ligature B_1 and B_2. A third area of skin was then removed, March 18, 1929, as noted in Fig. 1. While bleeding vessels were again encountered, this hemorrhage was quickly controlled completely by the application of adrenalin

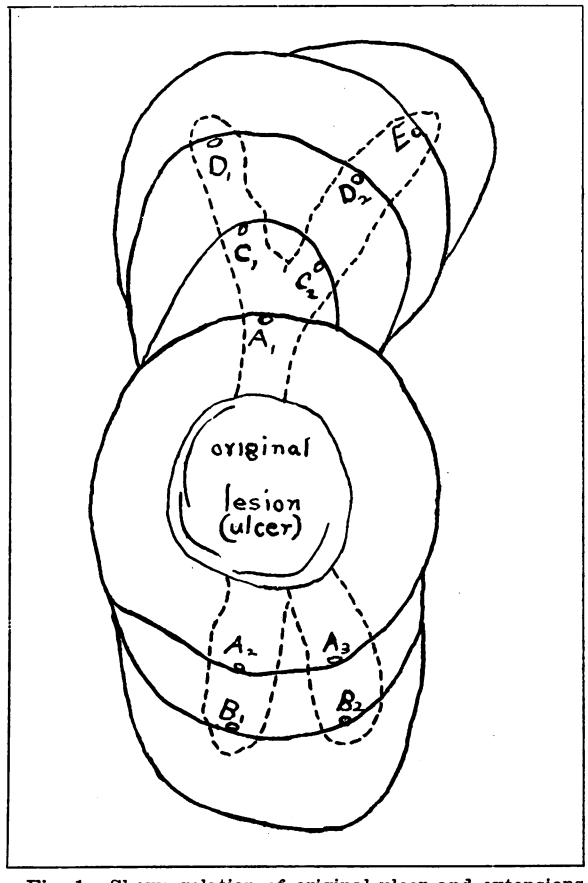


Fig. 1.—Shows relation of original ulcer and extensions to operative procedure. Extensions of the lesion into deeper tissues along the blood vessels is shown by dotted lines. Heavy lines indicate sites of skin incisions and include the pieces of skin removed at each operation. The letters indicate the sites where ligatures were placed.

solution 1-1000 for only a minute or so. Clean granulation then quickly filled the remaining area and Thiersch grafts were laid over the wound on March 28, 1929.

The dressing covering these grafts was removed after eight days and at this time a slough was present at the point of the ligation of the artery A_1. A layer of skin and superficial fascia was removed with this area of slough, April 8, 1929. It was necessary to ligate two vessels C_1 and C_2. Slough formed at both points of ligatures. Another layer of skin and fascia was removed April 11, 1929. Two more ligatures had to be placed, one at D_1 and one at D_2. Slough formed at each place and a third layer was removed April 18, 1929. At this time all hemorrhage was readily controlled with adrenalin excepting about the artery E, in Fig. 1. A slough slowly formed at this point and a fourth piece of skin and fascia was removed April 30, 1929.

In spite of the fact that we were passing at each of these latter operations from the smaller to the larger branches of the temporal artery, all hemorrhage was readily controlled by adrenalin and pressure in the last operative area.

Clean granulation then finally filled the whole area and it was covered with Thiersch grafts. No areas of infection were noted when the dressing covering these grafts was removed, ten days later. A recent letter from the patient in New York and one from Dr. Burton S. Lee, July 2, 1929, tells me that the whole lesion has healed very well.

PATHOLOGY

The pathology of the lesions in this case was interesting. Grossly one could see no change in the scalp except the original ulcer and the sloughs

forming about the ligated vessels. The microscopic sections alone revealed the true state and extent of the lesion. Sections through the original ulcer showed the epidermis greatly thickened at the edge of the ulcer. The sweat glands and hair follicles were either atrophied or degenerating. The sebaceous glands were present beyond the inflammatory zone and were hypertrophic. The derm and superficial fascia throughout the whole of this region was densely infiltrated with mononuclear cells. The fibrous tissue was increased and there were very few blood vessels. The larger arteries and veins were present but they were empty of blood. Their media stained poorly. Their adventitial coats were infiltrated with round cells and the endothelial layers of many were greatly thickened. Beneath the epidermis were numerous abscesses filled with normally staining and degenerating polymorphonuclear cells. Numerous sections taken from various pieces of tissue removed at operation showed this intense cellulitis extended out in the deeper portions of the superficial fascia, as indicated by the dotted lines in Fig. 1. The derm and superficial fascia was not involved in this region beyond the ulcer except for a few areas of round-cell infiltration. The inflammation followed the larger arteries. The fibrous tissue of the superficial fascia was thickened and hyaline in many places. It was infiltrated everywhere with scattered polymorphonuclear cells and a few small round cells. The arteries showed marked changes. Their adventitial coats were infiltrated with cells. Their medial coats stained poorly and their endothelial linings were thickened in many places to layers as much as five cells in thickness.

Sections taken at the points of ligation of the arteries showed that they had become necrotic and the tissue about was undergoing gangrenous changes.

COMMENTS

We were dealing in this case with a chronic cellulitis in an old infected scalp which had become complicated by radium treatment. The arteries for a wide area about this lesion had suffered severe changes and there was an extension of the lesion along these vessels.

I report this case not only because of the unusual character of the lesion, but also because it was not possible to see the extent of this lesion or to note the arterial changes at the time of operation. This was due to the fact that the blood vessels are small in this region and the lesion was diffuse and deep-seated. It was not until we had performed several operations that we appreciated that we could follow these areas of infection by the failure of the arteries to respond to adrenalin.

Having once appreciated this simple adrenalin test it was easy in the last operation to remove the skin well beyond the area of infection and to obtain immediate healing. That diseased arteries will not respond to adrenalin has been known for many years. I report this case here only to emphasize the use of adrenalin in such cases. The test may be of use not only in similar cases but also in the treatment of many radium and x-ray burns where arterial changes are largely responsible for the failure to heal.

94 North Madison Avenue.

A LIGHTED KELLY ANOSCOPE

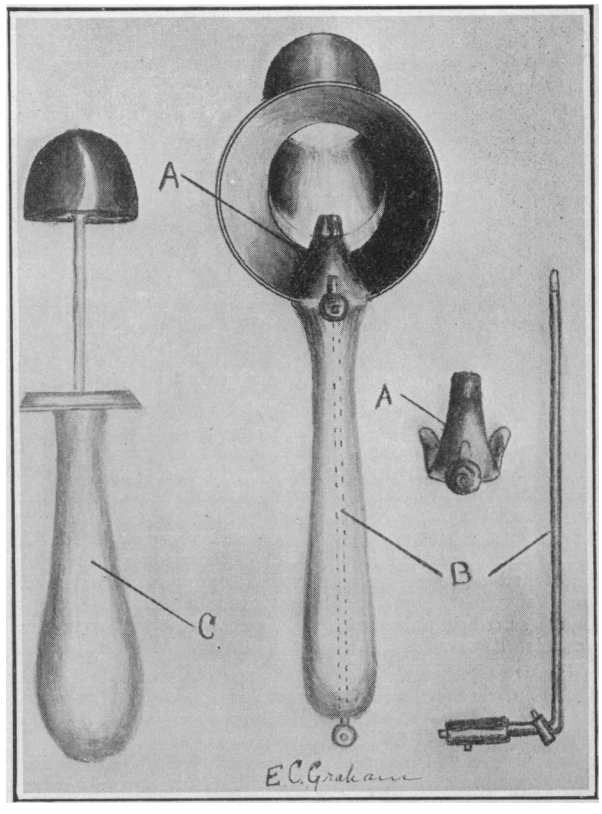
By M. S. Woolf, M. D.
San Francisco

THE treatment of hemorrhoids by injection demands a good view of the interior of the anal canal and lower rectum and working space. A nonfenestrated instrument allows all the hemorrhoids to present at one time and does not require rotating. The wide external mouth of the Kelly anoscope, carrying a light which is reflected onto the hemorrhoids, permits injections easily, however ill the room be illuminated. The accompanying diagram represents a Kelly anoscope fitted with a light carrier (B) which passes through the handle, its terminal light being projected into the rectum by a small reflector (A). This fits on the rim of the instrument adjacent to the handle.

The instrument with obturator (C) is first inserted in the ordinary way, and the light carrier and reflector adjusted after the obturator has been removed.

These modifications were arranged for me by the Electrosurgical Instrument Company, Rochester, New York.

384 Post Street.



Lighted Kelly Anoscope.